California Department of Transportation

Capital Outlay Support
Workload Development Peer Review

Action Plan

March 14, 1997

1. Contents

2. Introduction

Item 2660-001-9942 of the supplemental report language to the 1996 Budget Act required the Department to develop a new estimating process for its 1997-98 Capital Outlay Support budget. It required that this new method be validated by engineering and management practitioners from the private and public sectors. Part of this validation was to be through a peer review by representatives of large, comparable private and public engineering enterprises.

The Peer Review Team consisted of:

Mr. Robert W. Bein, P.E.,	Chief Executive Officer, Robert Bein, William Frost & Associates.
Mr. William Carley, P.E.,	Senior Vice President, CH2M HILL
Mr. Fred W. Henstridge, P.L.S.,	Principal/Program Manager, Psomas and Associates
Mr. Victor M. Mendez, P.E.,	Assistant State Engineer - Statewide Project Management, Arizona Department of Transportation

The team submitted its report on September 16, 1996. It made sixty recommendations. It grouped these recommendations into five categories:

A. XPM Anchored Database Development and Implementation	15 recommendations.
B. Project Management Program Implementation	21 recommendations.
C. Project Delivery Efficiencies	12 recommendations.
D. Allocation of Resources	3 recommendations.
E. Performance Measures and Incentives	9 recommendations.
TOTAL	**60 recommendations**

This Action Plan addresses those recommendations. The Department found that two recommendations in category A each had two parts. One part can be accomplished in 1997, while the other will take longer. The Department is therefore approaching each part as a separate recommendation. Accordingly, this plan addresses 62, rather than 60, recommendations. It addresses these recommendations in three categories:

Recommendations with which the Department agrees and which it has included in the Implementation Schedule (see Section 4)

In the plan as recommended by the peer team:	34 recommendations
In the plan in a modified form:	7 recommendations
Sub-total, in the Implementation Schedule:	**41 recommendations**

Recommendations with which the Department agrees and which it has completed (see Section 5)

Completed as recommended by the peer team:	12 recommendations
Completed in a modified form:	4 recommendations
Sub-total, Completed recommendations:	**16 recommendations**

Recommendations with which the Department disagrees (see Section 6)

	5 recommendations

TOTAL	**62 recommendations**

3. Summary of Responses

This section summarizes the relationship between the five categories in the Peer Review Report and Department's responses to the 62 recommendations.

- Section 4 provides a schedule for implementing the 42 recommendations summarized below as "Items in the Action Plan".
- Section 5 is a list of the 16 recommendations for which the implementation is complete (four of them in a modified form).
- Section 6 lists the four recommendations with which the Department disagrees.
- Section 7 lists all the recommendations, with the Department's response to each recommendation.

Category	Items in the Action Plan		Items not in the Action Plan			Total in Category
	Caltrans Response					
	Agree	Modify, then agree	Agree - Item complete	Agree - Item completed in a modified form	Disagree	
A. XPM Anchored Database Development and Implementation	11	2	1	1	2	**17**
B. Project Management Program Implementation	13	1	5	1	1	**21**
C. Project Delivery Efficiencies	5	2	3	2		**12**
D. Allocation of Resources	2		1			**3**
E. Performance Measures and Incentives	3	2	2		2	**9**
Total Recommendations	**34**	**7**	**12**	**4**	**5**	**62**

4. Implementation Schedule

Target Completion	Recommendation Number	Recommendation

Items to be completed in calendar year 1997

Target Completion	Recommendation Number	Recommendation
3/1/97 Capital	B. 21	It is recommended that depending on the difficulty of the project that up to 10% of the Outlay Support Resources be allocated to Project Management to allow the Project Manager sufficient resources to guarantee budget, schedule and quality of the project.
5/1/97 project	C. 2	Caltrans needs to establish a program for client/customer debriefing to determine the satisfaction level of the customer.
7/1/97 wide	A. 1	PART A: A realistic date should be set for implementing a fully operational Department- database XPM system. *Part A refers only to the implementation of the XPM scheduling software. Part B (below) refers to the remainder of the Project Management System.*
7/1/97	A. 5	As a 1st phase, concentrate on getting XPM up and running to level 5, then expand its use to lower levels. However, continue to check detailed logic so that it can be expanded to lower levels at a future date.
7/1/97	A. 11	It is recommended that the XPM system be fine tuned so that it can be rolled up or down from a base level 5 on a function level, a project level, and a program level.
7/1/97	B. 3	In order to be sure that the Function Manager will equitably allocate resources to projects, the general rule should be that all Projects Managers should be one hat.
7/1/97 projects	B. 4	However, some small (less than one million dollars in capital outlay) single function may lend themselves to the two hat management concept at the discretion of the District Program Manager.
7/1/97	B. 12	Although Resident Engineers have a history of working as independent Project Managers during construction, it is important that in the future, the Project Manager maintains control of the project schedule and budget through the completion of construction because it is this phase where the most can be learned through accountability for measurable results.
7/1/97	B. 13	Where a "Project Engineer" is assigned to the project management team, this person must be a signator and supporter of the final project resource agreement. *Item will be completed in a modified form.*
7/1/97	B. 15	On page 24, Chapter VII - Project Management Activities, the role of the Project Manager should be expanded through the construction phase and the Resident Engineer should be part of the work plan.
7/1/97	B. 17	The role of the Project Engineer needs to be more thoroughly defined to prevent overlap or omissions in responsibility with the Project Manager.
7/1/97 so	C. 1	All levels of the Caltrans project team need a better understanding of who the customer is they can become customer oriented.
7/1/97 the	C. 6	It is recommended that Caltrans submit an updated implementation plan and schedule to Legislature when the use of a completely functional product driven zero based budgeting and project management program will be ready for user-friendly use. Since it is a total culture change, as well as a technical data base change it must have time to work itself into the work habits of the staff and leaderships within Caltrans.
7/1/97	D. 2	Rather than arbitrarily allocating some standard percentage of each Capital Outlay Support budget to the ESC, ESC should estimate its real needs on a project-by-project basis, and sign the work plan agreement.
7/1/97	D. 3	Corporate decisions on a program level need to take into account the resource estimates recommended by Project Managers and based on the individual project Product Driven

Section 4. Implementation Schedule

Target Completion	Recommendation Number	Recommendation
Zero		
essential		Based Budgeting Program. This first step of product driven zero based budgeting is
and		and must be an integral part of the Capital Outlay support programs budgeting process
		is a must if Caltrans is to ever be successful in project delivery under the new project management culture.
8/1/97 friendly	A. 2	The complete program should be clearly defined for output, fully operational and user
		before mandating its use by Project Managers.
8/1/97	A. 8	The implementation of the XPM resource management interface with Oracle needs to be expedited since the total project management process, as a complete tool, hinges on the information system data output report and its effective use by Project Managers. Without this timely and user- friendly complete data reporting system, the Project Manager is forced to improvise for much of the ongoing data needed to fully understand the status of a project.
8/1/97	A. 12	All costs affecting the project need to be entered into the database on a regular basis if the overall status of the various projects are to be evaluated by the Project Manager to make timely changes as part of the Program Project Management Plan.
8/1/97 to	B. 5	Project data pertaining to earned value such as budget and schedule expended compared
		milestone reached and tasks accomplished must be available to Project Managers on a minimum of a monthly basis. Graphic trend reports must be available to the Project Managers so they can quickly and easily recognize project status.
1/1/98	B. 9	It is recommended that in implementing contracting-out for Professional Services under the Flexible Resource Plan or when negotiating internal work plan project agreements, that Project Managers and Function Managers be trained in negotiating and administering lump sum contracts in a manner consistent with Quality Based Selection procedures.
1/1/98	B. 11	Any functional unit of Caltrans whether at the District level or Headquarters Staff that will use any of the resources assigned to a Project Manager must be a party to the signed work agreement.
1/1/98 on	B. 19	Function Managers are as critical to the Product Driven Zero Based Budgeting Project Management Program as the Project Manager and should receive training as to their role
		the project team.
1/1/98 project	B. 20	It is recommended that it be standard procedure for the Project Manager to interview the "Customer" at the start of the project to determine scope, and upon completion of the
		to prepare a standardized report on customer satisfaction.
1/1/98 for	C. 4	It is recommended that borrowing resources from projects scheduled to be completed in future years be discouraged since this only tends to delay and cause budgeting problems
		the future project.
1/1/98 on	C. 5	It is recommended that a plan be developed for project management of Caltrans oversight
		locally managed projects.
1/1/98 SB1505	C. 11	PRC recommends that Caltrans determine their interpretation of the requirements of
part		(devolution) and SB160 (flexible resources) and the impact of a favorable decision on the
		of the Supreme Court for contacting-out, so the major changes can be incorporated into the project management and budget programs as soon as possible without creating another frustrating cultural shift for staff. *Item will be completed in a modified form.*
1/1/98 be	E. 8	"Earned Value" should become a byword of the project management program and should
		applied in the following three basic accountability areas:

Section 4. Implementation Schedule

Target Completion	**Recommendation Number**	**Recommendation**
		a) Resources Expended Compared to Resources Budgeted for the Project
		b) Products Delivered Compared to Program Milestones
		c) Actual Schedule Compared to Planned Schedule

Items to be completed in calendar year 1998

7/1/98	A. 15	The PRC recommends that Caltrans train all staff members to use the term "XPM" appropriately as only one of the elements of the "Program / Project Management Plan" that is limited to providing scheduling and support cost management data with elements of risk management.
7/1/98	B. 8	It is recommended that a formal project management training program be established for all new Project Managers and Functional Managers.
7/1/98	C. 12	A project should not be scheduled in the STIP for design and construction until it has environmental clearance. *Item will be completed in a modified form.*
7/1/98	E. 2	Implement the proposed on-going internal performance measurement program for quality, schedule, and budget results.
7/1/98	E. 4	There should be a system set up so the Program Manager and Project Manager can continually monitor the adopted performance measures to assure they remain current and credible. *Item will be completed in a modified form.*
7/1/98	E. 5	A simplified performance measuring program needs to be established that measures resource use compared to productivity with simple logical reports on a project and program level for review by the Program Manager, District, Director, Corporate and the Legislature. *Item will be completed in a modified form.*
7/1/98	E. 9	In depth training at all levels of staff must be implemented as soon as the complete system is operational so that they clearly understand their role in Capital Outlay Support and know they must be accountable and motivated to contribute to project delivery in the most cost effective manner on each individual project through the implementation of the Product Driven Zero Based Budgeting and project management system.
1/1/99	A. 7	The ultimate data warehousing technology system of which XPM is only a part must be able to provide the data to allow for a final comparison of the original budget for a project, the record of the changes to the project, and the final total cost of the project including all overhead and ancillary costs for the project debriefing of the Project Manager, Function Manager, and Program Manager, then store this data in a systematic data base to use as a budgeting guide for future projects.
1/1/99	A. 14	PART A: It is imperative that a reality check be run on XPM, and an achievable accomplishment list including the linkage data of this system with ancillary output programs such as CATS, ORACLE, etc. This should provide Project Managers with the actual data deliverables including dates when delivery will take place. It should be prepared as soon as possible to restore credibility of the basic tool.
1/1/99	B. 10	It is recommended that in implementing contracting out for professional services under the Flexible Resource Plan that Project Managers and Function Managers be trained in the negotiating and administrating of Design/Build contracts based on the Quality Based Selection two-phase procedures. *Item will be completed in a modified form.*

Items that do not have a scheduled completion date

	A. 1	PART B: A realistic date should be set for implementing a fully operational Department-wide database XPM system, as well as the coordinated and fully functional total Program/Project Management reporting system of which XPM is only one part.
	A. 9	It is recommended that the following data sources be tracked and placed in the Project Managers Database as measurable goals for project evaluation and future budgeting as a

Target Completion	*Recommendation Number*	*Recommendation*

part

of the Program/Project Management Plan system.

a) Significant milestones and projects completion data compared with original schedule.
b) Final cost of project compared with original budget.
c) Receipt of External permits.
i) Date received vs. original schedule.
ii) Additional costs to project to receive permit.
d) Number and complexity of bid documents addendums during bidding process.
e) Comparison of bid cost with original programmed budget, fund request, engineers estimate, and final award amount.
f) Number and additional cost of construction change orders.
g) Number and settlement cost of post construction claims.
h) Accident rate during construction.
i) Ongoing tracking of accident rate after project completion.
j) Comparison of actual maintenance costs compared to anticipated programmed maintenance.
k)   Success of congestion management program.
Item will be completed in a modified form.

A. 13   There should be a link between XPM and CATS for tracking consultant hours and costs, and consultants should use the same WBS elements as State Employees for reporting their time and CATS should permit direct entry of consultant invoices.
Item will be completed in a modified form.

A. 14   PART B (CATS): It is imperative that a reality check be run on XPM, and an achievable accomplishment list including the linkage data of this system with the Contract Administration and Tracking System (CATS).

5. Completed Recommendations

Recommendation
    Number   *Recommendation*

XPM Anchored Database Development and Implementation

A. 4   Continue to use PYPSCAN as a reality check until XPM works.

A. 6   XPM must readily accept ongoing adjustments for variable or changed conditions such as revised time cards, cash overtime, leave balance, and 9/80 schedules for shortened, more finite tasks with resource assignments by named individuals.
Item completed in a modified form.

Project Management Program Implementation

B. 1   Although Single Focal Points may have the responsibility and flexibility in deciding whether to go below level 5 for project management data collection at this time, sometimes Corporate may have special requirements on certain projects to collect data below level 5, and therefore, a formal policy on these projects should be established for guidance of the Project Manager.
Item completed in a modified form.

B. 2   The Project Manager should finalize project budgets in dollars including the cost of other project costs, the dollar value of PYs, as well as consultant costs when applicable.

B. 6   Function Managers must have the ability to reallocate resources based on changing project demands and priorities subject to Project Manager concurrence and Single Focal Point arbitration of differing opinions of the team members.

B. 7   It is recommended that the Project Manager for a project that shares function resources between Districts (Brokering), be from the District where the project is located, and that brokering of portions of discreet project functions be used sparingly due to the inefficiency of split project functional teams.

B. 14   The PRC recommends that an oversight task force be created at the Headquarters level, staffed by the

most

       experienced Functional Managers, to monitor the Product Driven Zero Based Budget and schedule requests submitted by Project Managers. This recommendation is made because, although project budgets are easier to monitor than program budgets, they are only as accurate as the experience and talents of the Project Manager and his team.   Since this is a new program for most Project Managers and there is little, if any, historical or norm data presently available. Strong oversight on a project level should

be

       implemented until these two major shortcomings are eliminated.
Item completed in a modified form.

B. 16   The Project Management Activities data recording is designed for large and complex projects. It would be helpful to Project Managers if a flexible system of reducing data reporting requirements for single function or small projects be provided for guidance.

Project Delivery Efficiencies

C. 3   It is recommended that requests for additional funding from the California Transportation Commission (CTC) contingency fund for projects and legislature finance letters for programs be used as often as required to request additional funds for projects and programs that experience significant unforseen changes that

require

       funding that is above the approved budget, rather than borrowing resources from the early stage of future projects.   The approval process for theses additional funding mechanisms must be expedited by both the CTC, and Legislature so as not to impact product delivery.

C. 7   It is recommended that Caltrans report its record of project deliveries in two categories -

       a) Continue to report on the number and percent of the original STIP projects proposed to be delivered

during

       the year, versus the actual percentage completed of the original projects, and the reason for non-completion on those that were not completed.

       b) Expand the report to include the number of new projects that were added to that year's STIP from the future STIP because of project efficiencies or additional available resources (such as new funding from

Recommendation
Number   *Recommendation*

bond

issues, etc. or reallocated funding from delayed or canceled projects) and their percent complete and time saved by moving them ahead.

C. 8   Caltrans should enhance the effectiveness of its Environmental Specialist resources so it can respond statewide, such as the District 12 Right-of-Way Service Center in an effort to expedite environmental clearance.

C. 9   Project completion schedules are established in programming documents adopted by the CTC on a different timeline than the state budgeting process. PRC recommends that Caltrans carefully evaluate its resource needs under the new project based program before committing to a project completion schedule and staff resource requirement, since otherwise it will continue to be a program based budget. Also, the Legislature will be carefully watching the completion results for the proposed full program with the current staff level thinking it is project based, when it is not.

Item completed in a modified form.

C. 10   PRC recommends that all future program resource requests include contingency plans which provide for the opportunity to use flexible resources, such as contracting-out, when unforeseen changes are required to prevent the reallocation of resources on a crisis basis.

Item completed in a modified form.

Item completed in a modified form.

Allocation of Resources

D. 1   It is recommended that the resource allocation to the Districts provide a flexible system of all types of District resources, such as the use of cash overtime, temporary employees, student interns, the reassignment of resources between Districts and the substitution of staff resources for professional services contracting-out dollars be established so that projects can move ahead on schedule. This ability to change resource allocation would eliminate the inefficiencies and additional costs caused by not being able to correct for the lack of needed resources or the over abundance of fixed resources.

Performance Measures and Incentives

E. 3   Caltrans needs an enhanced incentive program to reward high performing staff members.

E. 6   It is recommended that all funds allocated to Caltrans for every program they are assigned be allocated to a product or service recognizable to the public so that the Legislature can evaluate cost benefit for each product or service. This would make it possible to evaluate the true cost of Capital Outlay Support for the project delivery program.

6. Recommendations with which the Department disagrees

Recommendation Number	Recommendation	Response

XPM Anchored Database Development and Implementation

A. 3	Establish one District as the trial District to work with Headquarters until the entire project management database and reporting system is working. Although District 3 has been the assigned District to date, it may be advantageous to consider either District 7 or District 12 as a future pilot to provide fresh ideas.	The schedule for developing the 1997-98 budget does not permit a second pilot. Each district has an immediate need to use the department's project management system, even if on a limited basis. The project management system should be limited to use by experts in Project Management Support Units. See Recommendation A.2.
A. 10	It is recommended that the XPM Administrator's Advisory Council (XAAC) task force be expanded to include the technical experts from each District or Region which are presently implementing XPM under the "Band-aid" concept in order to bring together the most knowledgeable practitioners with the charge of developing the fully operational user friendly system that meets the Project Managers needs. This basic system should be implemented in the trial district before it is expanded throughout all districts. (Note the excellent Operational "Band-aid" systems detailed by the Northern Region and District 7.)	This is not the role of the XAAC. Their charter is specifically the implementation and support of XPM, not a total project management information system. This activity would weaken the charter of XAAC and jeopardize implementation of XPM as added work is placed on the XPM Administrators. The North Region (District 3) is the XPM trial District. The District 7 "band aid" is a form of data warehouse. The department is expanding the project management data warehouse to include project schedule data and timesheet data. This will provide data and functionality equivalent to local (district) data warehouses. A team approach including district experts will be used to define the requirements of the expanded data warehouse.

Project Management Program Implementation

B. 18	'Open to traffic' should become the most important milestone, and the date of one year after this milestone should be the final milestone for the Project Manager.	The PM should maintain responsibility until completion of project close out. Open to public is difficult to define. Claim resolution and right of way clean-up can take several years after the project is open to traffic.

Performance Measures and Incentives

E. 1	Establish an annual external measurement tool (peer review) for quality, schedule and budget results. Not necessarily a standing committee with fixed membership.	This should not be done at this time. The Workload Development Peer Review has just concluded. The independent consultant evaluation just getting started will give an assessment of how Caltrans compares to external engineering organizations in workload estimating. The process to develop the Capital Support quality performance measure will give a measurement tool for quality. In addition to these, the Project Management Improvement efforts, the organization/cultural change to one-hat project manager, and the Department's performance measurement process are all in the process of being implemented. To establish an external measurement process until these processes are in place would be premature, confusing and possibly, counterproductive. Once these processes are in place, this recommendation could be revisited.
E. 7	After reviewing the Report to the Legislature on	Caltrans is developing a three-tiered system of

Recommendation Number	Recommendation	Response
	Capital Support Performance Measures, the PRC recommends an expansion of the number of proposed measures.	performance measures measures consisting of: 1.A limited number of corporate measures that focus on the overall health of transportation in California. 2. Program measures that focus on the health of each of the Department's programs. 3. Operational measures at the point where delivery of a product or service occurs.

The Peer Review Team recommends four additional performance measures. One of these is more appropriately a Department-level measure, one is already included in the Capital Support Measures, and two are more appropriately operational measures.

The Department-level measure would measure quality some time after construction. The Department is developing measures of mobility, safety and trip quality that will address this need.

The program-level measure would address capital cost growth after construction. Capital Support performance measure #9 addresses this by comparing the final estimate to the proposed final estimate.

A third recommendation would measure quality in project development. This is an operational measure of the design process.

The fourth recommended additional measure is to address support cost after construction. This is an operational measures of Construction Claims and Legal. These support costs are a fairly small part of Capital Support and do not warrant elevation to the Program-level. |

7. Detailed Responses to all Recommendations

Recommendation Number	Recommendation	Response

XPM Anchored Database Development and Implementation

Recommendation Number	Recommendation	Response
A. 1	PART A: A realistic date should be set for implementing a fully operational Department-wide database XPM system.	Agree. This listing is Part A of Recommendation A.1. which is actually 2 recommendations. Each will have their own schedule. - XPM stand alone. XPM is solely a project scheduling and resource planning system. - Integrated, automated, enterprise-wide program / project management system. This listing is for part A (XPM stand-alone). By July 1, 1997, all major State funded projects will be scheduled in XPM.
A. 1	PART B: A realistic date should be set for implementing a fully operational Department-wide database XPM system, as well as the coordinated and fully functional total Program/Project Management reporting system of which XPM is only one part.	Agree. This is actually 2 recommendations which will each have their own schedule. - XPM stand alone. XPM is solely a project scheduling and resource planning system. - Integrated, automated, enterprise-wide program / project management system. This listing is for part B (integrated, automated, enterprise-wide program / project management system). This item has not yet been scheduled. It requires a Feasibility Study Report. It is anticipated that this FSR will be completed by the end of the calendar year. It will include an implementation schedule.
A. 2	The complete program should be clearly defined for output, fully operational and user friendly before mandating its use by Project Managers.	Agree. Limit Hands-on use of XPM to the "experts" in the Project Management Support Unit (PMSU). Project Managers to receive information from paper reports, third party software (Excel, Word, etc.) and the Project Management Data Warehouse (PMDW Release 3.0).
A. 3	Establish one District as the trial District to work with Headquarters until the entire project management database and reporting system is working. Although District 3 has been the assigned District to date, it may be advantageous to consider either District 7 or District 12 as a future pilot to provide fresh ideas.	Disagree. The schedule for developing the 1997-98 budget does not permit a second pilot. Each district has an immediate need to use the department's project management system, even if on a limited basis. The project management system should be limited to use by experts in Project Management Support Units. See Recommendation A.2.
A. 4	Continue to use PYPSCAN as a reality check until XPM works.	Agree - Item complete. The Department is using PYPSCAN as a reality check.
A. 5	As a 1st phase, concentrate on getting XPM up and running to level 5, then expand its use to lower levels. However, continue to check detailed logic so that it can be expanded to	Agree. "Up and running to Level 5" will be completed as part of the workplan development activity being tracked by the "Project Workplan Development

Section 7. Detailed Responses to all Recommendations

Recommendation Number	**Recommendation**	**Response**
	lower levels at a future date.	Status Report".
A. 6	XPM must readily accept ongoing adjustments for variable or changed conditions such as revised time cards, cash overtime, leave balance, and 9/80 schedules for shortened, more finite tasks with resource assignments by named individuals.	Item completed in a modified form. XPM currently has the ability to perform the functions listed in the recommendation assuming Caltrans chooses to schedule work to the named individual. Caltrans does not have the level of maturity in project planning knowledge and skill to schedule to named individuals, and there are many situations where this level of planning is not cost effective.

Suggested rewording: On an ongoing basis, Caltrans needs to assess the needs for more advanced, finite schedule and develop processes and tools to accomplish the scheduling. Advanced, finite schedule should not occur before successful implementation of initial gross planning (Level 5 to Cost Centers) and should be incrementally implemented. Advanced, finite schedule should only be used where it is cost effective to schedule to finite detail.

There is no implementation schedule as this is a continuous activity. |
| A. 7 | The ultimate data warehousing technology system of which XPM is only a part must be able to provide the data to allow for a final comparison of the original budget for a project, the record of the changes to the project, and the final total cost of the project including all overhead and ancillary costs for the project debriefing of the Project Manager, Function Manager, and Program Manager, then store this data in a systematic data base to use as a budgeting guide for future projects. | Agree. This will be accomplished through an expanded Project Management Data Warehouse (Release 3.0) |
| A. 8 | The implementation of the XPM resource management interface with Oracle needs to be expedited since the total project management process, as a complete tool, hinges on the information system data output report and its effective use by Project Managers. Without this timely and user-friendly complete data reporting system, the Project Manager is forced to improvise for much of the ongoing data needed to fully understand the status of a project. | Agree. This will be accomplished through an expanded Project Management Data Warehouse (Release 3.0) |
| A. 9 | It is recommended that the following data sources be tracked and placed in the Project Managers Database as measurable goals for project evaluation and future budgeting as a part of the Program/Project Management Plan system.

a) Significant milestones and projects completion data compared with original schedule.
b) Final cost of project compared with original budget.
c) Receipt of External permits.
i) Date received vs. original schedule.
ii) Additional costs to project to receive permit. | Modify, then agree. Items i, j and k are not project data, hence, should not be in a project management database system. These are transportation facility operational data. This data is tracked in other databases. It will be available by relating the project data to those databases.
i) Ongoing tracking of accident rate after project completion.
j)Comparison of actual maintenance costs compared to anticipated programmed maintenance.
k)Success of congestion management program.

This recommendation requires an integrated, |

Recommendation

Number	Recommendation	Response
	d) Number and complexity of bid documents addendums during bidding process. e) Comparison of bid cost with original programmed budget, fund request, engineers estimate, and final award amount. f) Number and additional cost of construction change orders. g) Number and settlement cost of post construction claims. h) Accident rate during construction. i) Ongoing tracking of accident rate after project completion. j) Comparison of actual maintenance costs compared to anticipated programmed maintenance. k) Success of congestion management program.	automated, enterprise-wide program / project management system. This requires a Feasibility Study Report. It is anticipated that this FSR will be completed by the end of the calendar year. It will include an implementation schedule.
A. 10	It is recommended that the XPM Administrator's Advisory Council (XAAC) task force be expanded to include the technical experts from each District or Region which are presently implementing XPM under the "Band-aid" concept in order to bring together the most knowledgeable practitioners with the charge of developing the fully operational user friendly system that meets the Project Managers needs. This basic system should be implemented in the trial district before it is expanded throughout all districts. (Note the excellent Operational "Band-aid" systems detailed by the Northern Region and District 7.)	Disagree. This is not the role of the XAAC. Their charter is specifically the implementation and support of XPM, not a total project management information system. This activity would weaken the charter of XAAC and jeopardize implementation of XPM as added work is placed on the XPM Administrators. The North Region (District 3) is the XPM trial District. The District 7 "band aid" is a form of data warehouse. The department is expanding the project management data warehouse to include project schedule data and timesheet data. This will provide data and functionality equivalent to local (district) data warehouses. A team approach including district experts will be used to define the requirements of the expanded data warehouse.
A. 11	It is recommended that the XPM system be fine tuned so that it can be rolled up or down from a base level 5 on a function level, a project level, and a program level.	Agree.
A. 12	All costs affecting the project need to be entered into the database on a regular basis if the overall status of the various projects are to be evaluated by the Project Manager to make timely changes as part of the Program Project Management	Agree. This will be accomplished through an expanded Project Management Data Warehouse (Release 3.0)
A. 13	There should be a link between XPM and CATS for tracking consultant hours and costs, and consultants should use the same WBS elements as State Employees for reporting their time and CATS should permit direct entry of consultant invoices.	Modify, then agree. We agree in principle. CATS may not be the best tool to accomplish this goal. Consultants are already submitting invoices utilizing WBS elements. There is, however, no system available for inputting, storing, and utilizing this information. We are currently in the process of developing a recommendation on how to obtain data that the program does not have.
A. 14	PART A: It is imperative that a reality check be run on XPM, and an achievable accomplishment list including the linkage data of this system with ancillary output programs such as CATS, ORACLE, etc. This should provide Project Managers with the actual data	Agree. All except consultant hours will be included as part of Project Management Data Warehouse, Release 3.0. CATS is not being used as intended. Any linkage with CATS requires that it be used for contract management.

Recommendation
Number	Recommendation	Response
	deliverables including dates when delivery will take place. It should be prepared as soon as possible to restore credibility of the basic tool.	This listing is for Part A (Project Management Data Warehouse)
A. 14	PART B (CATS): It is imperative that a reality check be run on XPM, and an achievable accomplishment list including the linkage data of this system with the Contract Administration and Tracking System (CATS).	Agree. All except consultant hours will be included as part of Project Management Data Warehouse, Release 3.0. CATS is not being used as intended. Any linkage with CATS requires that it be used for contract management.
		This listing is for CATS. There is currently no schedule for improving this system.
A. 15	The PRC recommends that Caltrans train all staff members to use the term "XPM" appropriately as only one of the elements of the "Program / Project Management Plan" that is limited to providing scheduling and support cost management data with elements of risk management.	Agree. Ongoing at SFP, SPMIT and XAAC meetings. To be expanded in updated XPM training.

Project Management Program Implementation

B. 1	Although Single Focal Points may have the responsibility and flexibility in deciding whether to go below level 5 for project management data collection at this time, sometimes Corporate may have special requirements on certain projects to collect data below level 5, and therefore, a formal policy on these projects should be established for guidance of the Project	Item completed in a modified form. The Project Manager and Functional Manager determine the appropriate level on a project-by-project basis. Completed in Caltrans Project Management Handbook, January 1995, and the "Guide to Caltrans COS Work Breakdown Structure", May 1996.
B. 2	The Project Manager should finalize project budgets in dollars including the cost of other project costs, the dollar value of PYs, as well as consultant costs when applicable.	Agree - Item complete. This is the Department's practice on the recently-initiated Project Support Budgets.
B. 3	In order to be sure that the Function Manager will equitably allocate resources to projects, the general rule should be that all Projects Managers should be one hat.	Agree. The Director signed a memo adopting a One-hat PM policy on 11/20/96. A major transition should coincide with the 1997/98 staffing plan development process.
B. 4	However, some small (less than one million dollars in capital outlay) single function projects may lend themselves to the two hat management concept at the discretion of the District Program Manager.	Agree. Statewide One-hat PM implementation policy is in the final draft stage. Implementation should begin 12/1/96. A major transition should coincide with the 1997/98 staffing plan development process.
B. 5	Project data pertaining to earned value such as budget and schedule expended compared to milestone reached and tasks accomplished must be available to Project Managers on a minimum of a monthly basis. Graphic trend reports must be available to the Project Managers so they can quickly and easily	Agree. This will be accomplished through an expanded Project Management Data Warehouse (Release 3.0)
B. 6	Function Managers must have the ability to reallocate resources based on changing project demands and priorities subject to Project Manager concurrence and Single Focal Point arbitration of differing opinions of the team members.	Agree - Item complete. This is the Department's current policy.

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B. 7	It is recommended that the Project Manager for a project that shares function resources between Districts (Brokering), be from the District where the project is located, and that brokering of portions of discreet project functions be used sparingly due to the inefficiency of split project functional teams.	Agree - Item complete. This is the Department's current practice
B. 8	It is recommended that a formal project management training program be established for all new Project Managers and Functional Managers.	Agree. The Department intends to institute this training.
B. 9	It is recommended that in implementing contracting-out for Professional Services under the Flexible Resource Plan or when negotiating internal work plan project agreements, that Project Managers and Function Managers be trained in negotiating and administering lump sum contracts in a manner consistent with Quality Based Selection procedures.	Agree. Agree, although we need to train Contract Managers first. The Project Management Program does not currently have the authority to conduct this training. The authority for negotiating and administering contracts resides with the Administrative Service Center (ASC). Provided resources (PY's and $'s) are available within the ASC, training can probably be accomplished by 1/1/98. This date is based on the assumption that the A&E Manual is updated and the Contract Managers are trained in the next 6 months, and resources need to be made available to accomplish these projects, before we can consider training Project and Functional Managers.
B. 10	It is recommended that in implementing contracting out for professional services under the Flexible Resource Plan that Project Managers and Function Managers be trained in the negotiating and administrating of Design/Build contracts based on the Quality Based Selection two-phase procedures.	Modify, then agree. Since we have no authority to utilize Design/Build contracts, we should not implement until we do. If a Design/Build bill is introduced and passed by the legislature around August of 1997, training can probably be completed by 1/1/99. This is based on the assumption that it will take 6 to 12 months to develop contract language and procedures for this type of contract before training can begin, unless additional resources are provided. Given additional resources this schedule may be accelerated.
B. 11	Any functional unit of Caltrans whether at the District level or Headquarters Staff that will use any of the resources assigned to a Project Manager must be a party to the signed work agreement.	Agree. This concept is currently in place in some districts. Implementation statewide will take place after statewide procedures are fully developed.
B. 12	Although Resident Engineers have a history of working as independent Project Managers during construction, it is important that in the future, the Project Manager maintains control of the project schedule and budget through the completion of construction because it is this phase where the most can be learned through accountability for measurable results.	Agree. This will be addressed in the new Project Management Procedures Manual.
B. 13	Where a "Project Engineer" is assigned to the project management team, this person must be a signator and supporter of the final project resource agreement.	Modify, then agree. The project engineer is generally a Transportation Engineer, Range D. A person in this classification is responsible for ensuring the engineering quality of the design and for complying with the Professional Engineer's Act. It is, however an non-supervisory

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		classification. People in this classification do not control staff assignments, nor do they control a budget. The resource agreement should be signed by the design functional manager. This is generally the project engineer's supervisor. This issue will be addressed in the new Project Management Procedures Manual.
B. 14	The PRC recommends that an oversight task force be created at the Headquarters level, staffed by the most experienced Functional Managers, to monitor the Product Driven Zero Based Budget and schedule requests submitted by Project Managers. This recommendation is made because, although project budgets are easier to monitor than program budgets, they are only as accurate as the experience and talents of the Project Manager and his team. Since this is a new program for most Project Managers and there is little, if any, historical or norm data presently available. Strong oversight on a project level should be implemented until these two major shortcomings are eliminated.	Item completed in a modified form. The Department has a Capital Support Budget Steering Committee that fulfills this function. At a more detailed level, it has a Single Focal Point Advisory Committee and at a yet more detailed level, it has a State-wide Project Management Improvement Team. These three teams satisfy all the requirements for this recommendation. The Capital Support Steering Committee consists of seven corporate Program Managers, a District Director and a Chief Deputy District Director. The Single Focal Point Advisory Committee consists of the District Division Chiefs for Program / Project Management. The State-wide Project Management Improvement Team consists of the Project Management Improvement Team leaders from each District plus the Corporate Project Management Office Chiefs.
B. 15	On page 24, Chapter VII - Project Management Activities, the role of the Project Manager should be expanded through the construction phase and the Resident Engineer should be part of the work plan.	Agree. Policy directing the practice of project management through construction is contained in Deputy Directive DD-34. This policy is detailed in R.P. Weaver's Memo of 6/24/93, "Project Management Effort Through Construction Phase" and the attached "Project Manager Post Award Duties". Project Manager roles and responsibilities through construction are also contained in the Roles and Responsibilities contained in the Project Management Handbook dated January 1995. In addition supplemental funds requests for ongoing construction contracts must be approved by the project manager. Although the Policy and Procedures have been in place for several years, the actual introduction of Project Management into the construction phase by the districts has moved forward slowly, but is now more prevalent than in previous years. The current effort to get workplans for all projects into XPM, will require the PM and Construction personnel to become involved in the planning for resources and timelines for the construction phase. We expect this effort will raise the awareness of the project management role through construction.
B. 16	The Project Management Activities data recording is designed for large and complex projects. It would be helpful to Project Managers if a flexible system of reducing data reporting requirements for single function or small projects be provided for guidance.	Agree - Item complete. Completed. Lower levels of the WBS can be used to report activities of single function or small type projects.
B. 17	The role of the Project Engineer needs to be	Agree.

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	more thoroughly defined to prevent overlap or omissions in responsibility with the Project Manager.	This has been addressed in the Project Development Procedures Manual and will be addressed in the new Project Management Procedures Manual.
B. 18	'Open to traffic' should become the most important milestone, and the date of one year after this milestone should be the final milestone for the Project Manager.	Disagree. The PM should maintain responsibility until completion of project close-out. Open to public is difficult to define. Claim resolution and right of way clean-up can take several years after the project is open to traffic. Project close-out includes the clean-up and the resolution of all claims.
B. 19	Function Managers are as critical to the Product Driven Zero Based Budgeting Project Management Program as the Project Manager and should receive training as to their role on the project team.	Agree.
B. 20	It is recommended that it be standard procedure for the Project Manager to interview the "Customer" at the start of the project to determine scope, and upon completion of the project to prepare a standardized report on customer satisfaction.	Agree. This recommendation requires several items: 1. Guidance to Project Managers on who their "customers" are (the tax payers are the true customers, but it is not practical to interview each tax payer. Instead, we need to identify who represents the tax payer). This identification will be facilitated by proposed legislation that will identify a sponsoring local agency for each STIP project. In most cases, the customer will probably be represented by the sponsoring agency or, on Caltrans-sponsored projects, the maintenance or operational unit that proposed the project. 2. Documentation of the requirement in the Work Breakdown Structure. 3. Documentation of customer expectations in the scoping document. This will require amendments to the project initiation guidelines. 4. Development of customer satisfaction questionnaires for the completion report. We have hired a consultant from California State University, Chico, to assist us in developing these instruments. It is anticipated that the representatives of the customers will complete questionnaires on each major project.
B. 21	It is recommended that depending on the difficulty of the project that up to 10% of the Capital Outlay Support Resources be allocated to Project Management to allow the Project Manager sufficient resources to guarantee budget, schedule and quality of the project.	Agree.

Project Delivery Efficiencies

C. 1	All levels of the Caltrans project team need a better understanding of who the customer is so they can become customer oriented.	Agree. This will be addressed in the new Project Management Procedures Manual.
C. 2	Caltrans needs to establish a program for client/customer debriefing to determine the project satisfaction level of the customer.	Agree. This is the intent of the effort to develop the Capital Support quality performance measure. This effort will start as soon as approval is received to undertake an Inter-Agency Agreement with the Survey Research Center at CSU, Chico.

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C. 3	It is recommended that requests for additional funding from the California Transportation Commission (CTC) contingency fund for projects and legislature finance letters for programs be used as often as required to request additional funds for projects and programs that experience significant unforseen changes that require funding that is above the approved budget, rather than borrowing resources from the early stage of future projects. The approval process for theses additional funding mechanisms must be expedited by both the CTC, and Legislature so as not to impact product delivery.	Agree - Item complete. The Department has submitted an $80 Million contingency fund proposal for storm damage related work to the CTC. On a regular basis, within the guidelines for submitting Finance Letters and Section 28's, the Department submits requests for resources for unforeseen work. One is currently being submitted for the Traffic Operations Center in Los Angeles.
C. 4	It is recommended that borrowing resources from projects scheduled to be completed in future years be discouraged since this only tends to delay and cause budgeting problems for the future project.	Agree. Proposed legislation to revise the STIP would create a "New Start Authority". This would earmark resources specifically for future projects.
C. 5	It is recommended that a plan be developed for project management of Caltrans oversight on locally managed projects.	Agree.
C. 6	It is recommended that Caltrans submit an updated implementation plan and schedule to the Legislature when the use of a completely functional product driven zero based budgeting and project management program will be ready for user-friendly use. Since it is a total culture change, as well as a technical data base change it must have time to work itself into the work habits of the staff and leaderships within Caltrans.	Agree.
C. 7	It is recommended that Caltrans report its record of project deliveries in two categories - a) Continue to report on the number and percent of the original STIP projects proposed to be delivered during the year, versus the actual percentage completed of the original projects, and the reason for non-completion on those that were not completed. b) Expand the report to include the number of new projects that were added to that year's STIP from the future STIP because of project efficiencies or additional available resources (such as new funding from bond issues, etc. or reallocated funding from delayed or canceled projects) and their percent complete and time saved by moving them ahead.	Agree - Item complete. Completed, this is done in the end of year CTC report.
C. 8	Caltrans should enhance the effectiveness of its Environmental Specialist resources so it can respond statewide, such as the District 12 Right-of-Way Service Center in an effort to expedite environmental clearance.	Agree - Item complete. This recommendation builds on the Environmental Program's existing pooling concept and organization. As part of Caltrans reorganization, to balance staff specialists with environmental workload, effective July 1, 1994 all Biological and Cultural Resource

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		positions within the Department were transferred to a specialist pool. These included both vacant and filled positions, but did not involve any physical transfer of staff. To help balance staff resources with workload, however, the authorization included the provision that no specialist vacancy could be filled unless first approved by the Environmental Program Manager. The reorganization also transferred to the Environmental Program 5 vacant Biologist positions. These positions were filled and organized as the Southern California Biological Pool (SoCal BioPool). The SoCal BioPool is sourced to and managed by the Environmental Program, but is headquartered in District 12 to cut down on travel costs. Staff is housed in Districts 7, 11 and 12. The pool of 5 Biologists including the Senior supervisor primarily serves Districts 7, 8, 11 and 12. In addition the Environmental Program has a pool of biologists headquartered in Sacramento who on an as needed basis are available to work anywhere in the state, but primarily work in Districts 3 and 10. The Environmental Program has a Cultural Resource Specialty pool located in Sacramento with staff available to work where ever needed through out the state. In addition the Program "brokers" District sourced Cultural staff between Districts as needed. To date this has worked very well. Recently as a part of its reorganization on a Regional basis the Department established two Regional environmental pools, one for northern California, based in Marysville and one for central California based in Fresno. No physical transfers of staff were made, but Environmental Specialist positions were centrally sourced in each region to facilitate assignment of staff to where ever the need is. As vacancies occur consideration will be given to moving positions to the area where most needed. In our opinion, pooling allows for better utilization of specialists in that they can be assigned where there is the greatest need. Also more effective use can be made of their expertise as their efforts can more easily be directed to projects and activities requiring that specialty. We have elected not to place all environmental specialists in one central location for several reasons. One major reason is to reduce travel time, fatigue and costs. Another is the benefit of staff becoming familiar with the resources and other agency staff within a region.
C. 9	Project completion schedules are established in programming documents adopted by the CTC on a different timeline than the state budgeting process. PRC recommends that Caltrans carefully evaluate its resource needs under the new project based program before committing to a project completion schedule and staff resource	Item completed in a modified form. This situation applies only to new projects added in a particular programming document. Although the STIP is a seven year document and the SHOPP is a four-year document, they are programmed biennially. Projects therefore remain in these documents for two or more programming cycles.

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	requirement, since otherwise it will continue to be a program based budget. Also, the Legislature will be carefully watching the completion results for the proposed full program with the current staff level thinking it is project based, when it is not.	Projects that roll forward from previous cycles already have Product Driven Zero Based Budgets. Budgets and schedules will be established on new projects during the programming process. These schedules will be tied to resources planned for the forthcoming year.
C. 10	PRC recommends that all future program resource requests include contingency plans which provide for the opportunity to use flexible resources, such as contracting-out, when unforeseen changes are required to prevent the reallocation of resources on a crisis basis.	Item completed in a modified form. The Department has, as stated above, already submitted a proposal for contingency funds for storm damage to the CTC. The regular legislative budget process, however, precludes departments from submitting budget change proposals for contingency items; thus our use of the CTC request. The Department evaluates the resources to be requested based on the type of work to be done. Contracting out may not be the best alternative or the legally accepted alternative for some types of work; therefore all contingency type fund requests may not always be limited to the use of contracting resources.
C. 11	PRC recommends that Caltrans determine their interpretation of the requirements of SB1505 (devolution) and SB160 (flexible resources) and the impact of a favorable decision on the part of the Supreme Court for contacting-out, so the major changes can be incorporated into the project management and budget programs as soon as possible without creating another frustrating cultural shift for staff.	Modify, then agree. These bills did not pass in the 1996 session. Caltrans will attempt to meet the intent of the bills to the extent that the law permits. Additional enabling legislation is expected in the 1997 Legislative session. If passed, this will take effect on January 1, 1998.
C. 12	A project should not be scheduled in the STIP for design and construction until it has environmental clearance.	Modify, then agree. A project for design and/or construction should not be programmed into the first two years of the STIP until Project Approval and Environmental Document (PA&ED) are complete, consistent with current CTC Resolution G-90-21, approved September 20, 1990. The Department supports further efficiencies of a two-tiered STIP Reform with projects for design/construction not programmed into the first four years of the STIP unless an environmental document has been completed.

Allocation of Resources

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D. 1	It is recommended that the resource allocation to the Districts provide a flexible system of all types of District resources, such as the use of cash overtime, temporary employees, student interns, the reassignment of resources between Districts and the substitution of staff resources for professional services contracting-out dollars be established so that projects can move ahead on schedule. This ability to change resource allocation would eliminate the inefficiencies and additional costs caused by not being able to correct for the lack of needed resources or the over abundance of fixed resources.	Agree - Item complete. The Department currently allocates in those four categories and the districts are even free to change between categories that are not externally controlled---i.e., they cannot use operating expenses or contracting out funds to create positions. They do have the flexibility of using other types of operating expenses to augment their cash overtime or student interns as well as other category of expenses. They can also use permanent positions to trade for temporary help if needed. Also in the 6/7 FY, the Department has implemented the allocation of Personal Services funds so these too, can be used to exchange for other expense needs.
D. 2	Rather than arbitrarily allocating some standard	Agree.

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	percentage of each Capital Outlay Support budget to the ESC, ESC should estimate its real needs on a project-by-project basis, and sign the work plan agreement.	The Department has never arbitrarily allocated a standard percentage of each Capital Outlay Support budget to the ESC. In the past, the ESC workload was calculated by PYPSCAN on a project-specific basis in the same manner as for the Districts. Under the new process the ESC does estimate its real needs on a project-by-project basis, and sign the work plan agreement.
D. 3	Corporate decisions on a program level need to take into account the resource estimates recommended by Project Managers and based on the individual project Product Driven Zero Based Budgeting Program. This first step of product driven zero based budgeting is essential and must be an integral part of the Capital Outlay support programs budgeting process and is a must if Caltrans is to ever be successful in project delivery under the new project management culture.	Agree. This is being done in the 1997-98 budget cycle.

Performance Measures and Incentives

E. 1	Establish an annual external measurement tool (peer review) for quality, schedule and budget results. Not necessarily a standing committee with fixed membership.	Disagree. This should not be done at this time. The Workload Development Peer Review has just concluded. The independent consultant evaluation just getting started will give an assessment of how Caltrans compares to external engineering organizations in workload estimating. The process to develop the Capital Support quality performance measure will give a measurement tool for quality. In addition to these, the Project Management Improvement efforts, the organization/cultural change to one-hat project manager, and the Department's performance measurement process are all in the process of being implemented. To establish an external measurement process until these processes are in place would be premature, confusing and possibly, counterproductive. Once these processes are in place, this recommendation could be revisited.
E. 2	Implement the proposed on-going internal performance measurement program for quality, schedule, and budget results.	Agree. This is the intent of the Department and the Project Management Program. This implementation process in under way.
E. 3	Caltrans needs an enhanced incentive program to reward high performing staff members.	Agree - Item complete. Finding 35 of the Peer Review Report is a partial list of the Department's award programs. Some of these have just been implemented in the last two years. For example, each of the Director's Awards are presented by the District Director's at staff meetings in the districts and each participating team/staff member receives an individual certificate. For these awards alone, 39 individuals were recognized for high performance.
		The Department frequently recognizes individual staff achievement related to certain critical projects. Recently staff members involved in seismic project accomplishments were presented with certificates. The management of the Office Engineer staff gives a

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		cake and coffee "party" each year to recognize outstanding performance of the entire organization.
		In addition to these "engineering" type awards, the Department recognizes sustained accomplishments both in the form of certificates and a monetary award that is determined by the Supervisor (within budgetary constraints). These referred to as "Gold" and "Silver" awards are given once per year.
E. 4	There should be a system set up so the Program Manager and Project Manager can continually monitor the adopted performance measures to assure they remain current and credible.	Modify, then agree.
The recommendation is not clear whether it refers to the current performance measurement program being implemented or to a separate system. The recommendation should be modified to include the intent of the current performance measurement program. This should include integration of operational measures.
E. 5	A simplified performance measuring program needs to be established that measures resource use compared to productivity with simple logical reports on a project and program level for review by the Program Manager, District, Director, Corporate and the Legislature.	Modify, then agree.
A process to measure resource use compared to productivity should be incorporated into the integration of XPM and project management reporting.
E. 6	It is recommended that all funds allocated to Caltrans for every program they are assigned be allocated to a product or service recognizable to the public so that the Legislature can evaluate cost benefit for each product or service. This would make it possible to evaluate the true cost of Capital Outlay Support for the project delivery program.	Agree - Item complete.
The Department has just created, in cooperation with the Legislative Analyst's Office, a set of performance measures that are driven by specific projects to which specific resources are allocated. All other non-project specific allocations are made to specific activities.   Specific amounts are allocated to overhead also and monitored for compliance during the year.
E. 7	After reviewing the Report to the Legislature on Capital Support Performance Measures, the PRC recommends an expansion of the number of proposed measures.	Disagree.
Caltrans is developing a three-tiered system of performance measures measures consisting of:
1.A limited number of corporate measures that focus on the overall health of transportation in California.
2. Program measures that focus on the health of each of the Department's programs.
3. Operational measures at the point where delivery of a product or service occurs.

The Peer Review Team recommends four additional performance measures. One of these is more appropriately a Department-level measure, one is already included in the Capital Support Measures, and two are more appropriately operational measures.

The Department-level measure would measure quality some time after construction. The Department is developing measures of mobility, safety and trip quality that will address this need.

The program-level measure would address capital cost growth after construction. Capital Support performance measure #9 addresses this by comparing the final estimate to the proposed final estimate. |

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		A third recommendation would measure quality in project development. This is an operational measure of the design process.
		The fourth recommended additional measure is to address support cost after construction. This is an operational measures of Construction Claims and Legal. These support costs are a fairly small part of Capital Support and do not warrant elevation to the Program-level.
E. 8	"Earned Value" should become a byword of the project management program and should be applied in the following three basic accountability areas: a) Resources Expended Compared to Resources Budgeted for the Project b) Products Delivered Compared to Program Milestones c) Actual Schedule Compared to Planned Schedule	Agree. This will be addressed in the appendix of the new Project Management Procedures Manual.
E. 9	In depth training at all levels of staff must be implemented as soon as the complete system is operational so that they clearly understand their role in Capital Outlay Support and know they must be accountable and motivated to contribute to project delivery in the most cost effective manner on each individual project through the implementation of the Product Driven Zero Based Budgeting and project management system.	Agree.